

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Thagard et al.
Appl. No.	: 10/772,049
Filed	: February 4, 2004
For	: MODIFIED ASPHALTIC FOAM MATERIALS
Examiner	: Cooney, J.
Group Art Unit	: 1711

PRE-APPEAL REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Applicants request pre-appeal review of the rejection under 35 U.S.C. §103(a) in the Office Action dated February 5, 2007. The claims have been twice rejected so the filing of the present paper is proper. No amendments are being filed with this request. This request is being filed with a Notice of Appeal. The review is requested for the reasons stated below.

Claims 1-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Roy (US 4,225,678), alone, or in view of Tzeng et al. (US 5,965,626). The Examiner characterizes the invention as involving a change in the order of mixing the ingredients. The Examiner then cites M.P.E.P. 2144.04 IV.C. in support of his assertion that selection of any order of mixing ingredients is *prima facie* obvious. The Examiner appears to have recognized that the invention requires mixing the two intermediate mixtures after they are forced through separate impingement dispensing heads to form a final reaction mixture. However, the Examiner alleges that mixing of intermediate mixtures using multiple conventional mixheads disclosed by Roy would have been an obvious process manipulation within the disclosure of Roy, "*absent a showing of new or unexpected results*" (emphasis added).

As set forth in the amendment filed on November 28, 2006, unexpected results are clearly obtained when the claimed method is performed. The Declaration of Casey Tzeng submitted

with that response compared the asphaltic foam produced by the claimed method with that of Roy. The results show the superior results obtained, namely excellent control of the reaction which enabled production of a foam that could be used to produce a molded product. In contrast, the process of Roy resulted in a violent reaction and an unusable product that expanded beyond the mold into which it was poured, or partial curing of the foam. Thus, these unexpected results go way beyond merely changing the order of mixing ingredients, and are based on the segregation of the two intermediate reaction mixtures rather than combining all components into a single reaction mixture.

The Examiner brushed these unexpected, superior results aside by stating that "fact based showings of new or unexpected results attributable to the addition of the asphalt component to the isocyanate reactant side which are commensurate in scope with the scope of the claims as they stand have not been demonstrated." Applicants strongly disagree with this statement, since a direct comparison of the claimed method with the method of Roy clearly shows the unexpected results obtained with the claimed method. These unexpected results are, in fact, commensurate in scope with the present claims.

Claim 1 of the present application is shown below:

1. A method for producing asphaltic foam comprising the steps of:
providing an asphalt;
liquefying said asphalt;
adding to said asphalt one or more isocyanates, thereby forming a first intermediate mixture;
bringing the temperature of said first intermediate mixture to between about 120°F and 170°F;
forming a second intermediate mixture comprising one or more polyols, a blowing agent, and a surfactant, wherein the second intermediate mixture is segregated from the first intermediate mixture; and
forcing said first intermediate mixture through a first impingement dispensing head;
forcing said second intermediate mixture through a second impingement dispensing head; and
mixing said first intermediate mixture forced through said first impingement dispensing head with said second intermediate mixture forced through said second impingement dispensing head, thereby forming a final reaction mixture, wherein said first intermediate mixture and said second intermediate mixture react and expand in a controllable manner such that the final reaction mixture does not expand beyond a form desired in a final molded asphaltic foam or cure before taking on said form to produce said asphaltic foam.

The Example presented in paragraph 6 of the Declaration of Casey Tzeng describes preparation of an asphaltic foam by providing a liquefied asphalt/isocyanate mixture (Saturant 701/M 20 S) that is representative of any asphalt/isocyanate mixture. This mixture is kept at

125°C, which is within the claimed range of 125-170°C. One of ordinary skill in the art would appreciate that the results obtained at 125°C would be indicative of the entire temperature range. The Declaration then describes formation of a second intermediate mixture comprising one or more polyols (GP 430, PLURACOL 355, PLURACOL 975), a blowing agent (water) and a surfactant (Dab.DC 5357), wherein the asphalt/isocyanate and polyol mixtures are segregated. The claims are not limiting with respect to the polyols, blowing agent and surfactant and the tested compounds are representative of all such compounds.

As recited in Claim 1, each mixture was forced through separate impingement dispensing heads (HITECH high pressure impingement machine) to combine the two mixtures, resulting in a controlled reaction and production of a foam that did not rise (cure) before filling a mold, and did not expand beyond a mold into which it was placed.

Thus, the showing of unexpected results provided in the Declaration is, in fact, commensurate in scope with the pending claims since one of ordinary skill in the art could readily determine that similar unexpected results would be obtained using any embodiment within the scope of claim 1. This is because the feature of the present invention that allows for these results is the separation of the ingredients in the two intermediate mixtures in combination with the lower temperature range recited in the claim. Lowering the temperature alone was not sufficient to produce these results. See Declaration ¶ 5.

As previously argued, and reiterated here, if the claimed invention were no more than an obvious change in the order of mixing of components, then one would expect that the same uncontrolled reaction described in Roy would also occur when the asphalt/isocyanate and polyol mixtures were initially separated, and then combined via separate impingement heads as presently claimed. However, this uncontrolled reaction did not occur. Instead, the reaction was controlled which allowed production of usable molded articles such as ridge caps and roofing tiles. Thus, the present method represents a significant, unexpected improvement that would not have been expected based on Roy, taken alone or in view of Tzeng.

CONCLUSION

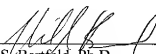
In conclusion, Applicants have clearly demonstrated unexpected results commensurate in scope with the present claims when the present method is used to produce asphaltic foam compared to the method used in the cited references. These unexpected results effectively rebut any *prima facie* showing of obviousness. Finally, even if a *prima facie* showing of obviousness

were established, the unexpected results obtained by the claimed invention would evidence the nonobviousness of the invention. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a), and allowance of the application, is respectfully requested.

Respectfully submitted,

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Dated: 5/4/07

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